Posttraumatic Stress Disorder Among Female Juvenile Offenders

ELIZABETH CAUFFMAN, PH.D., S. SHIRLEY FELDMAN, PH.D., JAIME WATERMAN, B.A., AND HANS STEINER, M.D.

ABSTRACT

Objective: While there is a growing body of evidence that psychopathology is common among incarcerated boys, relatively little is known about the prevalence and manifestations of mental health problems among incarcerated girls. This study examines the incidence of posttraumatic stress disorder (PTSD) in a sample of 96 adolescent female offenders and its relation to socioemotional adjustment. **Method:** Self-report questionnaires were used to tap socioemotional adjustment, and a semistructured interview was conducted to determine PTSD symptomatology. **Results:** The results indicate that the rate of PTSD among incarcerated female delinquents not only is higher than that in the general population but surpasses the incidence of PTSD among incarcerated male delinquents. In addition, those who suffer from PTSD also tend to exhibit higher levels of distress and lower levels of self-restraint. **Conclusions:** These findings provide a starting point for more detailed investigations of the relations between trauma, psychopathology, and violence and suggest that the study of trauma may offer a new way of looking at links between victim and perpetrator. *J. Am. Acad. Child Adolesc. Psychiatry,* 1998, 37(11):1209–1216. **Key Words:** posttraumatic stress disorder, juvenile offenders, gender.

While delinquent behavior among adolescent males has, over the past few decades, become a familiar part of our social landscape, a more recent phenomenon is the marked increase in adjudicated female delinquency. Although total crime has fallen in the 1990s, the number of crimes perpetrated by female adolescents rose 23% between 1989 and 1993 (Office of Juvenile Justice and Delinquency Prevention, 1996). Furthermore, the severity of adolescent female crimes escalated between 1989 and 1993. In those 4 years, violent crimes such as murder, rape, robbery, and aggravated assault rose an astonishing 55% among female adolescents (Economist, 1996; Office of Juvenile Justice and Delinquency Prevention, 1996).

Explanations for this increase are of paramount importance to researchers, social workers, and policymakers alike. One area that warrants particular attention involves the relations between traumatic experiences, mental health problems, and delinquent behavior. Previous research has found that exposure to traumatic events may indeed be linked to delinquent behavior and that delinquent acts may be a direct or indirect reflection of past victimization (Schwab-Stone et al., 1995). Furthermore, exposure to trauma has become more common in recent years. Approximately half of urban youths report being exposed to shootings or stabbings, and 74% report feeling unsafe in their environment (Schwab-Stone et al., 1995). While there is mixed evidence on whether females are more likely than males to be exposed to trauma (compare for example, Kessler et al., 1995, with Dembo et al., 1993; Horowitz et al., 1995), studies have consistently found that among those who are exposed to trauma, females are more likely than males to develop mental health problems as a result (Breslau et al., 1991; Dembo et al., 1993; Horowitz et al., 1995; Kessler et al., 1995). In particular, females are six times more likely than males to develop posttraumatic stress

Accepted June 23, 1998.

From Stanford University, Stanford, CA.

This paper was presented at the 1997 annual meeting of the American Academy of Child and Adolescent Psychiatry.

Preparation of this manuscript was supported by the Stanford Center on Adolescence and by a grant from the California Wellness Foundation to Dr. Steiner. The authors thank the California Youth Authority, in particular Dr. Saeed Behshid, for coordinating and executing this study. The authors are especially grateful to Renee Pavelski and Lisa Richker for their assistance in the collection and coding of the data.

Reprint requests to Dr. Cauffman, Department of Law and Psychiatry, Western Psychiatric Institute and Clinic, University of Pittsburgh, 3811 O'Hara Street, Pittsburgh, PA 15213; e-mail: cauffman@msx.upmc.edu

disorder (PTSD) (Giaconia et al., 1995). Given the growing body of research indicating that victims of violence are more likely than their peers to also be perpetrators (e.g., Bell and Jenkins, 1993; Haywood et al., 1996; Widom, 1989), it has been suggested that recent increases in female delinquency may be a consequence of the females' greater susceptibility to the traumatic events they experience in the increasingly violent settings of modern urban neighborhoods, and that, as a result, we should view female delinquency as a symptom rather than the problem itself (Bowers, 1990).

Events such as abuse, molestation, and witnessing violence are well-known risk factors for the development of trauma-related psychopathology (Horowitz et al., 1995), but while there is a growing body of evidence that such psychopathology is common among incarcerated boys (Burton et al., 1994; Steiner et al., 1997), relatively little is known about the prevalence and manifestations of trauma-related mental health problems among incarcerated girls. This study will examine one form of trauma-related psychopathology—PTSD—in a population of delinquent females. Specifically, this study has three goals: (1) to describe the types of trauma these females experience, (2) to establish the incidence of PTSD among incarcerated females, and (3) to examine the relation between PTSD and socioemotional adjustment among this population. We emphasize that the goal of this study is not to provide a comprehensive description of the relations between trauma, psychopathology, and delinquency, but rather to present initial descriptive data on *one* disorder among delinquent girls and to determine how these data are correlated with key measures of adjustment. Further study will be required to obtain an accurate and detailed understanding of the links between traumatic experiences, adjustment, psychopathology, and delinquency. Our hope is to provide a starting point for such research.

PTSD is typically caused by an overwhelming event outside the range of ordinary human experience. Diagnostic criteria for PTSD include a history of exposure to a "traumatic event" and symptoms from each of three clusters (specifically, intrusive recollections, avoidant/numbing symptoms, and hyperarousal symptoms) lasting for at least 1 month (American Psychiatric Association, 1994). Previous research has found that between 1% and 14% of the general population currently suffer from PTSD (American Psychiatric Association, 1994), but higher lifetime incidence rates of PTSD have been found among urban and incarcerated youths. For example, Horowitz et al. (1995) found that 67% of urban adolescent girls met PTSD symptom criteria over their lifetime. Steiner et al. (1997) found that 32.3% of incarcerated males were *currently* presenting symptoms of PTSD. To date, rates of PTSD among incarcerated females have not been examined, nor have comparisons been made between males and females in high-risk settings.

PTSD has also been shown to be associated with problem behaviors. In a study of 384 community-based adolescents, Giaconia et al. (1995) found that those with any history of PTSD symptomatology (14.5%) were more likely than those without to have behavioral-emotional problems, interpersonal problems, academic failure, suicidal behavior, and health problems. Furthermore, those with *current* PTSD symptomatology (6.3%) were more at risk than those with past symptomatology.

Previous research on incarcerated males suggests that PTSD symptomatology is associated with disturbances in socioemotional adjustment (Steiner et al., 1997). There is a growing consensus that socioemotional adjustment and personality can be described in terms of relatively few broad dimensions. For example, Tellegen (1985) described dimensions of negative emotionality, positive emotionality, and constraint (Church and Burke, 1994), whereas Block and Block (1980) described personality in terms of ego-resilience and ego control. Weinberger and Schwartz (1990) have conceptualized socioemotional adjustment in older children, youths, and adults in terms of two superordinate dimensions: distress and self-restraint. The subjective experience of distress, a composite of anxiety, depression, low self-esteem, and low well-being, refers to the tendency to feel dissatisfied with oneself and one's ability to achieve desired outcomes. It incorporates aspects of high negativity and low positive affectivity (Watson and Clark, 1984). The other superordinate dimension, self-restraint, is a composite of impulse control, suppression of aggression, consideration of others, and responsibility. It refers to socialization and self-control in terms of inhibiting immediate desires that conflict with one's long-term interest or with positive relations with others.

Since previous research has related PTSD symptomatology to disturbances in socioemotional adjustment among incarcerated males (Steiner et al., 1997), and because girls may be more susceptible to the effects of traumatic events, we believe that females suffering from

PTSD will exhibit high levels of distress and low levels of restraint. We hypothesize that incarcerated female juvenile delinquents will report higher levels of traumatic events and as a result will exhibit higher rates of PTSD than the general female population and that these rates will also exceed those observed among male juvenile delinquents. In addition, we hypothesize that incarcerated boys and girls with PTSD will demonstrate adjustment styles different from those of incarcerated youths without PTSD.

METHOD

Sample

The sample consisted of 96 female wards from the California Youth Authority (CYA), Ventura School. The girls' ages ranged from 13 to 22 years (mean age = 17.2 years, SD = 1.8), and the ethnic distribution was as follows: 23.3% white, 21.1% African-American, 28.9% Hispanic, 4.4% Asian, 12.2% biracial, and 10% other. The girls were sentenced for a range of committing offenses: 69% for violent crimes against people (e.g., murder, assault, robbery), 21% for property crimes (e.g., burglary, auto theft, receiving stolen property), 4% for drug-related crimes, and 6% other crimes (e.g., prostitution, evading an officer). Approximately 43% of the female offenders were officially identified as gang members. The average duration of incarceration at the CYA facility was 18 months, with a minimum of 3 months and a maximum of 86 months.

A comparison sample of incarcerated boys was obtained from a previous study by Steiner et al. (1997). It consisted of 93 male wards from the CYA, O.H. Close School. The average age was 16.6 with a standard deviation of 1.2, the minimum age being 13 and the maximum 20. The racial makeup was as follows: 37.6% African-American, 26.9% Hispanic, 30.1% white, and 5.4% other. The average duration of incarceration at the CYA facility was 13 months. Committing offenses ranged from auto theft (Youthful Offender Parole Board [YOPB] category 7) to first-degree murder (YOPB category 1). The modal YOPB category was 3, representing rape, robbery, or other violent crimes. The youths in both the male and female samples are representative of the general CYA population (Steiner et al., 1997).

Procedure

Data for the female population were collected between 1996 and 1997. Self-report questionnaires were administered by an on-site psychologist and were originally completed as part of a broader study involving the development of a mental health screen for incarcerated youths. This study was approved by both the CYA and the institutional review board at Stanford University. Subjects who completed questionnaires were interviewed in either December 1996 or June 1997. Upon initial contact, verbal and written explanations were provided, confidentiality was assured, and written consent was obtained. Specifically, prospective participants were told that the information provided would not be shared with the staff at the CYA. In addition, subjects were told that their treatment at the CYA would not be affected nor would they gain anything toward their eventual parole whether they decided to participate or not. Interviewers emphasized that the procedure was voluntary and that subjects could withdraw at any time without penalty. Prospective participants were told that the study focused on stress in women's lives and how they cope with that stress. Of 99 female wards approached, three chose to leave the study during the consent and interview process because they did not want to talk about stressful and traumatic events.

The duration of the interviews ranged from 15 to 45 minutes, depending on each subject's willingness to talk. A debriefing period was included to provide closure after discussing extremely traumatic events. Each participant was asked not to discuss the procedure in detail with other wards, so as not to influence the experience of other participants, and was encouraged to notify one of the interviewers or staff if she had any questions or later felt she needed to talk.

Measures

Socioemotional Adjustment. The 62-item Weinberger Adjustment Inventory was used to assess two broad dimensions of socioemotional functioning: distress and self-restraint (Weinberger and Schwartz, 1990). Each of the items was rated on a 5-point scale (5 = very true of me to 1 = not true of me). A distress score was derived from 29 items tapping four affective dimensions: anxiety, depression, low well-being, and low self-esteem (α = .82). Sample questions include, "I worry too much about things that aren't important," and "I often feel sad or unhappy." A restraint score was derived from 30 items tapping four dimensions: impulse control, suppression of aggression, responsibility, and consideration (α = .85). Sample items include, "I do things without giving them enough thought," and "I think about other people's feelings before I do something they might not like." Distress and self-restraint scores are presented as percentile scores based on clinical and nonclinical samples of more than 2,000 adolescents (Weinberger, 1997). The scale has been found to have good psychometric properties and to display convergent, discriminant, and predictive validity in both delinquents and nondelinquent adolescents (Feldman and Weinberger, 1994).

Traumatic Experiences. The incidence of trauma was reported in two ways. First, overall exposure to trauma was assessed using three separate questions. Subjects were asked to respond *yes* or *no* to the following items: "Have you ever been badly hurt or in danger of being hurt?" "Have you ever been raped or been in danger of being raped?" "Have you ever seen someone severely injured or killed (in person—not in the movies or on TV)?" In addition to the three traumatic experiences asked on the questionnaire, we also recorded the type of traumatic experience they mentioned during the PTSD interview. Two independent raters listened to each tape and categorized the trauma each girl experienced into 1 of 10 categories: rape/molestation, abuse by family member, witness of domestic violence, witness of violence committed by others, victim of violence, their committing offense, death of a loved one, other (e.g., car accident, drug-related experiences), will not reveal trauma to interviewer, and no trauma reported. The raters were college graduates who were trained by a board-certified child and adolescent psychiatrist. The interrater reliability was satisfactory (κ = 0.77), and when discrepancies were encountered, they were resolved by a board-certified child and adolescent psychiatrist.

Posttraumatic Stress Disorder. PTSD was assessed using the PTSD module of the Revised Psychiatric Diagnostic Interview (Othmer et al., 1981). This semistructured interview contains 27 questions, including 1 cardinal item, 5 social significance questions, and 4 groups of auxiliary questions. PTSD is established according to *DSM-III-R* criteria. The interview begins with the cardinal question: "Have you ever experienced nightmares or flashbacks, in which you found yourself reliving some terrible experience over and over

again?" The interview then progresses to the social significance questions (e.g., "Did your reactions to this event ever interfere with your schoolwork, your job, or your chores around the house?"). The remainder of the interview comprises three subgroups of questions. Group A consists of three questions to assess intrusive thoughts and nightmares (e.g., "Did you find that you often could not stop the memory of this event from popping into your mind, no matter how hard you tried?"). Group B includes six questions that assess the subjective experience of the trauma (e.g., "Even after this event was completely over, did you find yourself much more weak and helpless than before?"). Group C contains six questions pertaining to cognitive and behavioral responses to the trauma (e.g., "Did you become more jumpy, jittery, nervous, or irritable than before?"). Several additional questions were asked to help place the events in context.

To receive a diagnosis of *current* PTSD, an interviewee was required to have answered affirmatively the cardinal question, at least one of the social significance questions, groups A and B, and at least two from group C. Furthermore, the symptoms described had to have been present in the past month, with previous manifestations in the past 3 months. While the measure typically requires a positive answer to the cardinal question before subsequent questions are raised, we found it necessary to alter this format slightly because this population is known to "forget" or avoid discussing traumatic experiences. Therefore, even when subjects answered *no* to the cardinal question, we continued with the rest of the interview as if the person had answered *yes*. If a subject's memory was triggered later in the interview, we then rescored the cardinal question positively.

In addition to coding for current PTSD, we also coded for *previous* PTSD. Respondents were classified as exhibiting previous PTSD if they met the criteria for PTSD but the symptoms occurred more than 3 months before the interview. A positive *lifetime* PTSD score was used to identify respondents who met the criteria for either current or previous PTSD.

Partial PTSD was also scored, with a *partial* PTSD diagnosis given to respondents who answered *yes* to the cardinal question and at least one other question. Current, previous, and lifetime partial PTSD scores were assigned in analogous manner to those for full PTSD. In summary, for the analyses that follow, two different scores are used: (1) a *current* classification of either no PTSD, partial PTSD, or full PTSD and (2) a *lifetime* PTSD score of either no PTSD, partial PTSD, or full PTSD.

Through substantial testing, the reliability and validity of this interview measure has proven reasonable in a general population (Othmer et al., 1981) and specifically in delinquent populations (Steiner et al., 1997). In this study, interrater reliability between two independent raters (college graduates) was 90% ($r = 0.82$, $\kappa = 0.76$) for lifetime diagnosis of PTSD and 73% ($r = 0.66$, $\kappa = 0.54$) for current PTSD. All disagreements were resolved via discussion with a third rater (a board-certified child and adolescent psychiatrist). Instructions were to present all PTSD interview findings and examine them together for veracity and then reach a compromise. The PTSD diagnoses used in this study represent these final agreements.

RESULTS

This study examines the relation between gender, trauma, delinquency, and mental health. The results are organized as follows: First, we identify the types of trauma to which incarcerated females were exposed. Second, we report the incidence of both lifetime and current PTSD among incarcerated females and compare these rates with those of an incarcerated male population. Finally, we examine the influence of PTSD on socioemotional adjustment.

Incidence of Trauma

The incidence of trauma was assessed by both standardized questions and topics mentioned during the interview. On the basis of the trauma-related items on the questionnaire, it appears that the majority of incarcerated females were exposed to multiple types of traumas. Specifically, 74% reported being either badly hurt or in danger of being hurt, 76% reported witnessing someone severely injured or killed, and 60% reported being raped or in danger of being raped.

In addition to the standardized questions on exposure to trauma, we also recorded the type of trauma the females reported during the interview. The traumatic events that were spontaneously recalled by the female offenders during the interview may be an underestimate of traumatic events experienced, since we did not systematically ask for historical accounts or for an enumeration of all traumatic events. These traumatic accounts were divided into five categories: (1) being a victim of violence (e.g., victim of rape/molestation, physical assault/attack); (2) witnessing a violent act (e.g., seeing someone shot or stabbed); (3) participating in a violent act (e.g., their own committing offense); (4) other (e.g., being in a serious car accident); and (5) no mention of any trauma. From the self-reported evidence cited above, it appears that boys were more likely to be traumatized as observers of violence, whereas girls were more likely to be traumatized as direct victims ($\chi^2_4 = 42.9$, $p < .001$). These findings are presented in Table 1.

Incidence of PTSD

It was predicted that incarcerated female juveniles would have elevated lifetime and current rates of PTSD in comparison with other populations. In this study, 65.3% ($n = 62$) of subjects had experienced PTSD at some time in their lives, with an additional 9.5% ($n = 9$) expressing some partial symptomatology of the disorder at some time in their lives. While 65.3% of the females displayed symptoms of PTSD at some time in their lives, 48.9% of the incarcerated females were *currently* exhibiting signs of PTSD and 11.7% had partial PTSD symptoms at the time of the study.

TABLE 1
Characteristics of Study Sample

	Female Sample (n = 96)	Male Sample (n = 93)
Mean age, years (SD)	17.2 (1.8)	16.6 (1.2)
Ethnicity, %		
African-American	21.1	37.6
Hispanic	28.9	26.9
White	23.3	30.1
Other	26.7	5.4
Average length of incarceration, months	18	13
Current symptoms of PTSD, %		
No symptoms	39.4	48.4
Partial	11.7	19.4
Current PTSD	48.9	32.3
Types of trauma mentioned, %		
Victim of violence	51	15
Witness violent act	17	48
Participate in violence	12	5
Other violence	9	7
No mention of trauma	11	25

Note: PTSD = posttraumatic stress disorder.

We predicted that female juvenile delinquents would exhibit a higher incidence of current PTSD symptomatology than male juvenile delinquents. The data strongly confirm this prediction. Females were approximately 50% more likely to be suffering currently from PTSD than the equivalent male population (48.9% versus 32.3%). This is a significant difference ($\chi^2_2 = 5.83$, $p < .05$). The incidence of partial PTSD was similar among female and male juvenile offenders (11.7% versus 19.4%, respectively) (Table 1).

Personality, Gender, and PTSD

It was predicted that among incarcerated youths, those with current PTSD symptomatology would differ from those without such symptoms in levels of socioemotional adjustment (i.e., distress and restraint). We tested this hypothesis using a 2 × 3 (gender × PTSD) analyses of variance, for which we divided subjects into three PTSD categories (using the current PTSD diagnosis): those with no symptoms, those with partial symptoms, and those with current PTSD. Self-reported distress varied as a function of PTSD group, with higher levels of PTSD symptomatology associated with higher levels of distress ($F_{2,160} = 14.69$, $p < .001$) (Fig. 1). Self-restraint was also found to vary between subjects with and without symptoms of PTSD. Those without PTSD tended to demonstrate higher levels of restraint than those with either partial or full diagnoses ($F_{2,161} = 4.36$, $p < .01$) (Fig. 2).

Modest gender differences in adjustment were observed. Specifically, females were more likely than males

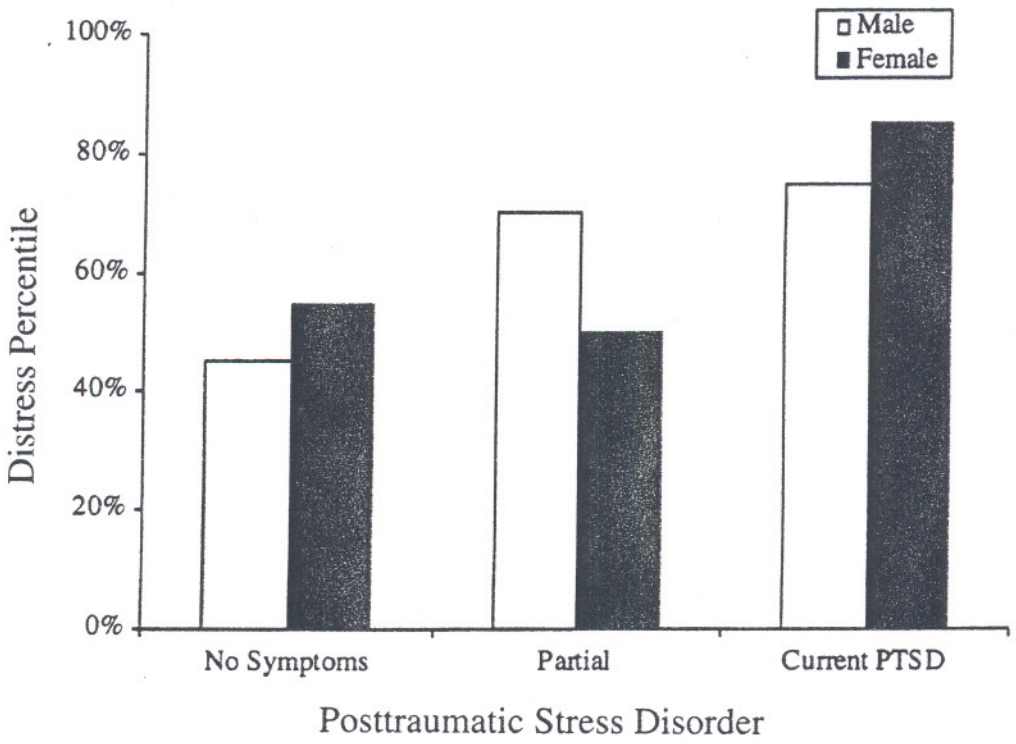

Fig. 1 Posttraumatic stress disorder (PTSD) differences in distress.

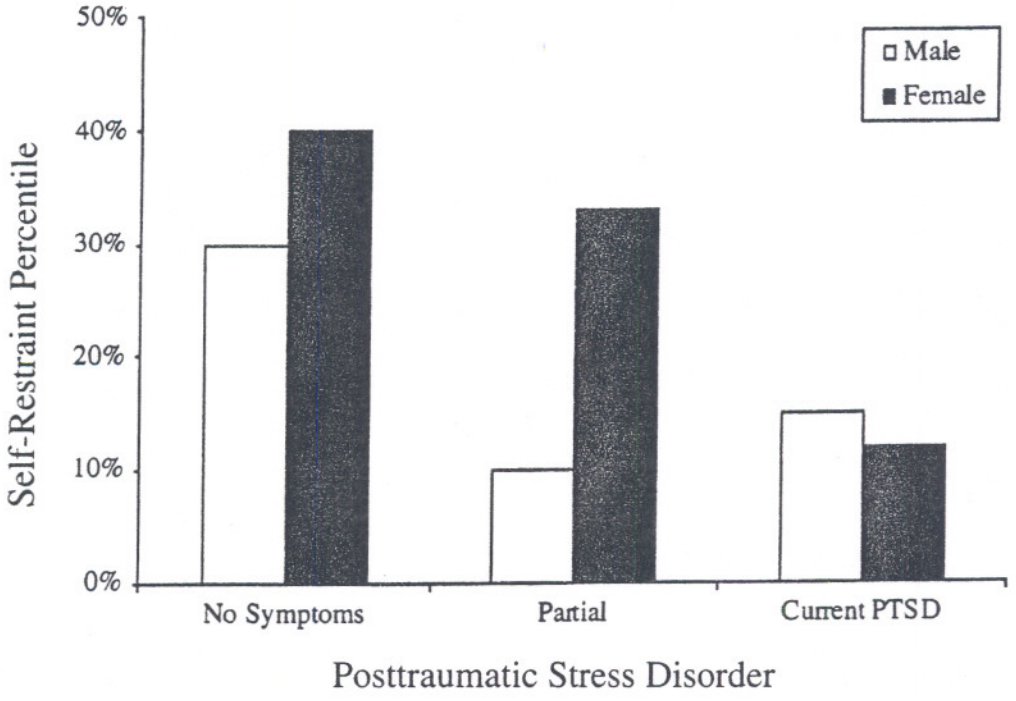

Fig. 2 Posttraumatic stress disorder (PTSD) differences in self-restraint.

to exhibit higher levels of distress ($F_{1,160} = 3.19$, $p < .07$), although they were similar to males on levels of self-restraint. There were no significant interactions between gender and PTSD group in the prediction of distress or restraint.

DISCUSSION

With the increase of violence in our inner cities and the rise of female delinquency, understanding the relations between gender, trauma, delinquency, and mental health has become ever more important. In this study we found that not only was the rate of exposure to trauma extremely high among incarcerated females (more than 70% of our sample had been exposed to some form of trauma), but the rates of PTSD were extremely high as well. Female juvenile delinquents were nearly 6 times more likely to suffer from PTSD both currently and at some time in their lives than the general population and 50% more likely to exhibit *current* symptoms of PTSD than male juvenile delinquents. In addition, PTSD was found to be associated with the socioemotional adjustment of these youths. Those suffering from PTSD were more likely to exhibit higher levels of distress and lower levels of self-restraint.

In addition to documenting the high levels of trauma experienced by incarcerated females, this study also established that the traumas experienced by delinquent females may be quite different from those experienced by delinquent males. Males, for example, were more likely than females to report having witnessed a violent event (e.g., more than half of the male sample reported witnessing the killing of a friend or family member). Females, on the other hand, were more likely to mention being the victim of violence (e.g., more than half of the female sample reported being a victim of either sexual or physical abuse).

Previous research has shown that females are more likely than males to develop PTSD after exposure to trauma (Breslau et al., 1991; Dembo et al., 1993; Horowitz et al., 1995). The results of this study are consistent with such a gender difference but suggest that it may be a reflection of differences in the nature of traumatic events endured by males and females rather than (or, possibly, in addition to) differences in the ways males and females respond to similar traumas. Indeed, some research suggests that being a victim of violence is more likely to lead to mental health problems than witnessing violence (Boney-McCoy and Finkelhor, 1995).

Our study is the first to examine PTSD among incarcerated female delinquents. As expected, we found that lifetime and current rates of PTSD in this population were significantly higher than among the general adolescent female population. The prevalence of PTSD in the general female adolescent population is 11%, as estimated by Giaconia et al. (1995) in a study of white work-

ing class youths and 9.2%, as assessed by Breslau et al. (1991) in a sample of urban young adults. More surprisingly, however, we found that the lifetime incidence of PTSD in our sample (65%) was similar to that observed by Horowitz and colleagues' (1995) sample (67%) of adolescent girls from inner-city neighborhoods. While differences between the populations in question make direct comparison difficult, we can see, nevertheless, that exposure to trauma is a common theme among inner-city and delinquent girls alike.

While this study contributes to our understanding of the relation between trauma, delinquency, and mental health, the findings should be interpreted with caution. First, our sample was small and did not allow for blind coding between males and females. While this study examined only 96 female delinquents, these girls represent nearly one quarter of the incarcerated female population in the CYA. This population, while unique in the seriousness of its crimes, is otherwise representative of female delinquents in California with regard to age, ethnicity, and socioeconomic status. Second, this study investigated only one mental health problem, PTSD, and did not consider comorbid pathology even though it is known that PTSD is accompanied by other disorders (Kessler et al., 1995; Riggs et al., 1995; Whitmore et al., 1997). Third, the cross-sectional nature of the study did not allow us to address issues of causality. Without well-defined chronologies, one cannot dismiss the possibility that factors responsible for the development of PTSD may also lead, separately, to socioemotional maladjustment or that behavioral problems may increase one's exposure to potentially traumatic events. Fourth, since the study focused solely on the most traumatic experience, the events reported by the female offenders during the interview may be an underestimate of the actual trauma in their lives. Finally, the appropriateness of comparisons with other samples is extremely difficult to assess. The Horowitz et al. (1995) sample, for example, while similar to ours in socioeconomic status, was recruited when subjects made appointments at a medical clinic (primarily to obtain birth control pills). This group may thus be more planful than the neighborhood norm. Giaconia and coworkers' (1995) sample, meanwhile, is 99% white, primarily from working or lower-middle class backgrounds. Nevertheless, as long as these differences are kept in mind, qualitative comparisons among these groups provide useful information regarding the prevalence of PTSD in a variety of populations.

An interesting result of this study is that during the PTSD interview, only 12% of the incarcerated females reported no trauma in their lives. This leaves 88% of the girls exposed to some form of trauma, yet only 61% ever displayed symptoms of PTSD. Why did the remaining 27% not show signs of PTSD? One possibility is that our measure of PTSD is not sensitive enough. Another explanation could be that people who are repeatedly exposed to trauma no longer react to it (Yehuda and McFarlane, 1995) or that the stressors they were exposed to differed in kind or severity. Unfortunately, we were unable to investigate this question because our sample was too small. Alternatively, there may be internal mechanisms (such as coping strategies) or personality factors that protect or insulate some people from such mental health problems (Raine, 1993).

By establishing a fundamental link between PTSD symptomatology and measures of impulse control and suppression of aggression, this study paves the way for more detailed investigations of the nature of this link and its implications. Such studies should endeavor to establish whether this link is causal, or whether symptoms of PTSD and disturbances of socioemotional adjustment are comorbid consequences of other environmental or psychopathological factors. The results of such studies have profound implications for the prevention and treatment of juvenile delinquency. If PTSD or other comorbid pathological conditions are found to have a causal relation to socioemotional adjustment, the proper treatment of such disorders may be crucial to ensuring the effectiveness of interventions designed to treat antisocial behavior. If, on the other hand, the observed relations are not directly connected, the detection of PTSD symptoms may nevertheless provide useful clues regarding the possible sources of socioemotional disturbances and problem behavior.

Clinical Implications

Our findings have some clinical implications, especially for clinicians providing care and consultation to incarcerated youths. First, the fact that PTSD often goes undiagnosed may result in a lack of match between treatment and need. For instance, female offenders are often referred for attention problems when, in fact, the underlying issue may be PTSD. Second, the manifestation of PTSD may interfere with the ability of these young women to benefit from the rehabilitative programs offered by the system. Clinically, we can expect

that that someone who actively suffers from PTSD will also have more difficulty controlling his or her impulses, requiring extra and perhaps more intensive intervention. This suggests that clinicians need to be prepared to explore gently and persistently to uncover symptoms of PTSD.

The association of PTSD status with elevated levels of distress and deficits in restraint has implications for the future of these girls. For instance, previous research has found that male juvenile offenders who exhibit low levels of restraint are more likely to reoffend 4½ and 10 years later (Steiner et al., in press; Tinklenberg et al., 1996). This effect was apparent after controlling for severity and frequency of previous crimes and age at onset of criminality. Similar outcomes may be expected for girls, but this remains to be demonstrated.

REFERENCES

American Psychiatric Association (1994), *Diagnostic and Statistical Manual of Mental Disorders, 4th edition (DSM-IV)*. Washington, DC: American Psychiatric Association

Bell C, Jenkins E (1993), Community violence and children on Chicago's southside. *Psychiatry Interpersonal Biol Proc* 56:46–54 (special issue: Children and Violence)

Block JH, Block J (1980), The role of ego-control and ego-resiliency in the organization of behavior. In: *Minnesota Symposium on Motivation*, Collins EA, ed. Hillsdale, NJ: Erlbaum

Boney-McCoy S, Finkelhor D (1995), Psychosocial sequelae of violent victimization in a national youth sample. *J Consult Clin Psychol* 63:726–736

Bowers L (1990), Trauma precipitating female delinquency: implications for assessment, practice and policy. *Child Adolesc Soc Work* 7:389–402

Breslau N, Davis G, Andreski P, Peterson E (1991), Traumatic events and posttraumatic stress disorder in an urban population of young adults. *Arch Gen Psychiatry* 48:216–222

Burton D, Foy D, Bwanausi C, Johnson J, Moore L (1994), The relationship between traumatic exposure, family dysfunction, and post-traumatic stress symptoms in male juvenile offenders. *J Traumatic Stress* 7:83–93

Church AT, Burke PJ (1994), Exploratory and confirmatory tests of the "Big Five" and Tellegen's three and four dimensional models. *J Pers Soc Psychol* 66:93–114

Dembo R, Williams L, Schmeidler J (1993), Gender differences in mental health service needs. *J Prison Jail Health* 12:73–101

Economist (1996), Crime: violent and irrational—and that's just the policy. *Economist* 339(June 8):23–25

Feldman S, Weinberger D (1994), Self-restraint as a mediator of family influences on boys' delinquent behavior: a longitudinal study. *Child Dev* 65:195–211

Giaconia R, Reinherz H, Silverman A, Bilge P, Frost A, Cohen E (1995), Traumas and posttraumatic stress disorder in a community population of older adolescents. *J Am Acad Child Adolesc Psychiatry* 34:1369–1380

Haywood T, Kravitz H, Wasyliw O, Goldberg J (1996), Cycle of abuse and psychopathology in cleric and noncleric molesters of children and adolescents. *Child Abuse Negl* 20:1233–1243

Horowitz K, Weine S, Jekel J (1995), PTSD symptoms in urban adolescent girls: compounded community trauma. *J Am Acad Child Adolesc Psychiatry* 34:1353–1361

Kessler R, Sonnega A, Bromet E, Hughes M, Nelson C (1995), Posttraumatic stress disorder in the National Comorbidity Survey. *Arch Gen Psychiatry* 52:1048–1060

Office of Juvenile Justice and Delinquency Prevention (1996), *Female Offenders in the Juvenile Justice System*. Pittsburgh: National Center for Juvenile Justice

Othmer E, Penick EC, Powell BJ, Read MR, Othmer SC (1981), *Psychiatric Diagnostic Interview-Revised (PDI-R)*. Los Angeles: Western Psychological Services

Raine A (1993), *The Psychopathology of Crime: Criminal Behaviors as a Clinical Disorder*. San Diego: American Press

Riggs PD, Baker S, Mikulich SK, Young SE, Crowley TJ (1995), Depression in substance-dependent delinquents. *J Am Acad Child Adolesc Psychiatry* 34:764–771

Schwab-Stone M, Ayers T, Kasprow W et al. (1995), No safe haven: a study of violence exposure in an urban community. *J Am Acad Child Adolesc Psychiatry* 34:1343–1352

Steiner H, Cauffman E, Duxbury E (in press), Personality traits in juvenile delinquents: the relation to criminal behavior and recidivism. *J Am Acad Child Adolesc Psychiatry*

Steiner H, Garcia I, Matthews Z (1997), Posttraumatic stress disorder in incarcerated juvenile delinquents. *J Am Acad Child Adolesc Psychiatry* 36:357–365

Tellegen A (1985), Structure of mood and personality and their relevance to assessing anxiety with an emphasis on self-report. In: *Anxiety and the Anxiety Disorders*, Tima A, Maser J, eds. Hillsdale, NJ: Erlbaum

Tinklenberg J, Steiner H, Huckaby W (1996), Criminal recidivism predicted from narratives of violent juvenile delinquents. *Child Psychiatry Hum Dev* 27:69–79

Watson D, Clark LA (1984), Negative affectivity: the disposition to experience aversive emotional states. *Psychol Bull* 55:465–490

Weinberger D (1997), Distress and self-restraint as measures of adjustment across the life span: confirmatory factor analysis in clinical and non-clinical samples. *Psychol Assess* 9:132–135

Weinberger DA, Schwartz GE (1990), Distress and restraint as superordinate dimensions of adjustment: a typological perspective. *J Pers* 58:381–417

Whitmore E, Mikulich S, Thompson L, Riggs P (1997), Influences on adolescent substance dependence: conduct disorder, depression, attention deficit hyperactivity disorder, and gender. *Drug Alcohol Depend* 47:87–97

Widom C (1989), The cycle of violence. *Science* 244:160–166

Yehuda R, McFarlane AC (1995), Conflict between current knowledge about posttraumatic stress disorder and its original conceptual bias. *Am J Psychiatry* 152:1705–1713